

OBSERVATIONS OF NOCTILUCENT CLOUDS
CARRIED OUT IN NOVOSIBIRSK BY THE NOVOSIBIRSK
DEPARTMENT OF THE ALL-UNION ASTRONOMICAL GEODETIC
SOCIETY IN 1964.

S.S. Voynov

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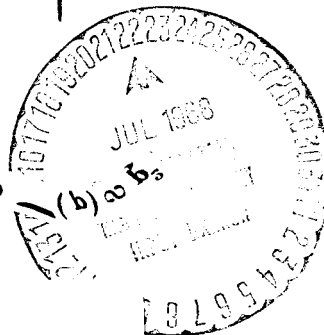
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ABSTRACT. The paper presents the results of the noctilucent cloud observations carried out in Novosibirsk by the Youth Section of the Novosibirsk Department of the All-Union Astronomical Geodetic Society.

Systematic observations of noctilucent clouds were begun in 1964 by the Youth Section of the Department. Among the group of observers there were schoolboys from the 8th and 9th grades [of 10-year school] of the town's schools: Sasha Botvinnik, Oleg Lyskov, Anatoliy Belkin, and Misha Gusev. The work was conducted under the supervision of the director of the children's astronomical observatory of Novosibirsk, S.S. Voynov, and it was financed by the Regional Station of Young Engineers (G.L. Bakulin, Director). /111*

Seminars were conducted for the school boys before the observation season started.

Beginning June 12th, the group began systematic observation of the twilight segment at the Mochishche station (20 km. from the town, $\varphi = 55^{\circ}2'$, $\lambda = 5^{\text{h}}30^{\text{m}}$). The absence of extraneous illumination, a completely open line of horizon along the azimuths (north, east and west), the absence of dew during the entire period of observation made this spot a good observation point. The observers had at their disposal a pilot-sphere theodolite, and "FED" and "Lyubitel" cameras. The observation program included:

- 1) Observation of the twilight segment every 15 minutes and filling in the journal form 1; the time for the beginning and end of the observation for each day was taken from "the supplement" to "The Instructions for the Observation of Noctilucent Clouds";
- 2) Taking theodolite measurements of the clouds at 15-minute intervals from the moment the clouds were detected;
- 3) Panoramic picture-taking with the aid of three "Lyubitel" cameras.

*) Numbers in margin indicate pagination in foreign text.

The investigation of the twilight segment was conducted continuously for a period of 52 nights (up to August 2nd).

The total number of periods recorded in the journal was 1166. Table 1 shows the closure of the dawn sector.

TABLE 1

Month	Closure of dawn segment				
	A	B	C	D	E
June	26	77	193	62	46
July	15	43	404	75	173
August		18	8		26
Total number of periods . . .	41	138	605	137	245
In %	4	11	54	11	20

During this period six appearances of clouds were registered (Table 2).

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Theodolite measurements and photographs of the clouds were made during all the appearances, excluding June 26/27.

TABLE 2

Date	Duration	Brightness, in numbers (bars)
June 13/24	01 ^h 30 ^m -02 ^h 45 ^m	2
June 26/27	00 45	3
June 27/28	01 00 -01 15	1 2 (d) 3
June 28/29	23 30 -02 15	2 3
July 3/4	01 15 -02 15	2
July 14/15	0 00 -03 45	2-4

As can be seen from Table 1, the conditions for detection of the clouds were not very good (frequent cloudiness), and this was reflected in the number of cloud appearances recorded. In the Tomsk department during the same period 16 appearances were registered. All appearances in Novosibirsk are duplicated by the ones from Tomsk; this indicates the seriousness and attentiveness of the school boys when they carried out such observations in Novosibirsk.